full of Snow or Ice (taking care that the Ice be made of the pureſt water, becauſe they put it into their wine) over-ſpreading firſt the bottom very well with *Chaffe*; by which I mean not any part of the ſtraw, but what remains upon the winnowing of the Corn; and I think, they here uſe Barley-chaffe. This done, they further, as they put in the Ice, or the Snow, (which latter they ram down,) line it thick by the ſides with ſuch Chaffe, and afterwards cover it well with the ſame; and in half a years lying ſo, 'tis found not to want above an eight part of what it weighed, when firſt put in. When ever they take it out into the Aire, they wrap it in this Chaffe, and it keeps to admiration. The uſe of it in *England* would not be ſo much for cooling of drinks, as 'tis here generally uſed; but for cooling of fruit, ſweet-meats &c. *So far this Author.*

The other uſual way both in *Italy* and other Countries, to conſerve Snow and Ice with *Straw* or *Reed*, is ſet down ſo punctually by Mr. *Boyle* in his *Experimental Hiſtory of Cold*, pag. 408. 409. that nothing is to be added. It ſeems *Pliny* could not paſs by theſe *Conſervatories*, and the cooling of drinks with Ice, without paſſing this ſevere, though elegant and witty, Animadverſion upon them: *Hi Nives, illi glaciem potant, pœnáſque montium in voluptatem gulæ vertunt: Servatur algor æſtibus, excogitatúrque ut alienis menſibus nix algeat*, lib. 19. cap. 4. But the *Epigrammatiſt* ſports with it thus;

Non potare nivem, ſed aquam potare rigentem
De nive, commenta eſt ingenioſa ſitis. Martial, 14. *Ep.* 117.

Directions for Sea-men, bound for far Voyages.

It being the Deſign of the *R. Society*, for the better attaining the End of their Inſtitution, to ſtudy *Nature* rather than *Books*, and from the Obſervations, made of the *Phænomena* and Effects ſhe preſents, to compoſe ſuch a Hiſtory of Her, as may hereafter ſerve to build a Solid and Uſeful Philoſophy upon; They have from time to time given order to ſeveral of their Members to draw up both *Inquiries* of things Obſervable in forrain Countries, and *Directions* for the Particulars, they deſire chiefly to be informed about. And conſidering with themſelves, how much they may increaſe their *Philoſophical* ſtock by the advantage, which *England* injoyes of making Voyages into all parts of the World, they formerly appointed that Eminent Mathematician and Philoſopher Maſter *Rooke*, one of their Fellowes, and *Geometry* Profeſſor of *Greſham Colledge* (now deceaſed to the great detriment of the Common-wealth of Learning) to think upon and ſet down ſome *Directions* for *Sea-men* going into the *Eaſt* & *Weſt-Indies*, the better to capacitate them for making ſuch obſervations abroad, as may be pertinent and ſuitable for their purpoſe; of which the ſaid Sea-men ſhould be deſired to keep an exact *Diary*, delivering at their return a fair Copy thereof to the *Lord High Admiral* of *England*, his Royal Highneſs the *Duke* of *York*, and another to *Trinity-houſe* to be peruſed by the *R. Society*. Which *Catalogue* of *Directions* having been drawn up accordingly by the ſaid Mr. *Rook*, and by him preſented to thoſe, who appointed him to expedite ſuch an one, it was thought not to be unſeaſonable at this time to make it publique, the more conveniently to furniſh Navigators with Copies thereof. They are ſuch, as follow;

1. To obſerve the Declination of the *Compaſs*, or its Variation from the *Meridian* of the place, frequently; marking withal, the *Latitude* and *Longitude* of the place, wherever ſuch Obſervation is made, as exactly as may be, and ſetting down the *Method*, by which they made them.

2. To carry *Dipping Needles* with them, and obſerve the Inclination of the Needle in like manner.

3. To remark carefully the Ebbings and Flowings of the Sea, in as many places as they can, together with all the Ac-

dents, Ordinary and Extraordinary, of the Tides ; as, their preciſe time of Ebbing and Flowing in Rivers, at *Promontories* or *Capes* ; which way their Current runs , what Perpendicular diſtance there is between the higheſt Tide and loweſt Ebb , during the Spring-Tides and Neap-Tides ; what day of the *Moons* age, and what times of the year, the higheſt and loweſt Tides fall out : And all other conſiderable Accidents , they can obſerve in the Tides, cheifly neer Ports, and about Ilands , as in St. *Helena*'s Iland , and the three Rivers there, at the *Bermodas* &c.

4. To make Plotts and Draughts of proſpect of Coaſts, Promontories , Iſlands and Ports, marking the Bearings and Diſtances, as neer as they can.

5. To ſound and marke the Depths of Coaſts and Ports, and ſuch other places nere the ſhoar , as they ſhall think fit.

6. To take notice of the Nature of the Ground at the bottom of the Sea , in all Soundings, whether it be Clay, Sand, Rock , *&c.*

7. To keep a Regiſter of all changes of Wind and Weather at all houres, by night and by day , ſhewing the point the Wind blows from , whether ſtrong or weak : The Rains, Hail, Snow and the like, the preciſe times of their beginnings and continuance, eſpecially *Hurricans* and *Spouts*; but above all to take exact care to obſerve the *Trade-Wines* , about what degrees of *Latitude* and *Longitude* they firſt begin, *where* and *when* they ceaſe, or change , or grow ſtronger or weaker, and how much ; as near and exact as may be.

8. To obſerve and record all Extraordinary *Meteors*, Lightnings, Thunders, *Ignes fatui* , Comets, *&c.* marking ſtill the places and times of their appearing , continuance, &c.

9. To carry with them good Scales, and Glaſſe-Violls of a pint or ſo, with very narrow mouths, which are to be fill'd with Sea-water in different degrees of *Latitude*, as often as they

they pleaſe, and the weight of the Vial full of water taken exactly at every time, and recorded, marking withall the degree of *Latitude*, and the day of the Month : And that as well of water near the Top ; as at a greater Depth.

Some Obſervations concerning Jupiter. *Of the ſhadow of one of his* Satellites *ſeen, by a Teleſcope paſſing over the Body of* Jupiter.

I have received an Account from very good hands, That on the 26th. of *September* laſt, at half hour after ſeven of the Clock, was ſeen, both in *Holland* and in *France* (by curious Obſervers, with very good Teleſcopes) the ſhadow of one of the *Satellites* of *Jupiter*, paſſing over his Body. One of thoſe ſmall Stars moving about his Body (which are therefore called his *Satellites*) coming between the Sun and it, made a ſmall Eclipſe, appearing in the Face of *Jupiter* as a little round black Spot. The Particulars of thoſe Obſervations, when they ſhall come to our Hands, we may (if need be) make them publik: Which Obſervations, as they are in themſelves very remarkable, and argue the Excellency of the Glaſſes by which they were diſcovered; So are we, in part, beholding to Monſieur *Caſſini* for them, who giving notice before-hand of ſuch Appearances to be expected, gave occaſion to thoſe Curious Obſervers to look for them.

Of a permanent Spot in Jupiter *: by which is manifeſted the converſion of* Jupiter *about his own Axis.*

Beſides that Tranſient Shadow laſt mentioned, there hath been obſerved, by Mr. *Hook* firſt (as is mentioned in *Numb.* 1. of theſe *Tranſact.*) and ſince by M. *Caſſini*, a permanent Spot in the Diſque of *Jupiter*; by the help whereof, they have been able to obſerve, not onely that *Jupiter* turns about upon his own Axis, but alſo the Time of ſuch converſion ; which he eſtimates